Annals of the Natal Museum, Vol. XV, part 10, issued 14 March, 1961

Gamaselliphis, a New Subgenus of the Genus *Cyrtolælaps* Berlese (Acarina : Mesostigmata : Rhodacaridæ).

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With 33 Text-figures.

SUMMARY.

THE new subgenus *Gamaselliphis* is regarded as belonging to the genus *Cyrtolælaps* sens. lat. *Gamaselliphis* is characterized by the fact that the ventri-anal shield is fused with the posterior dorsal shield in both sexes. Five new species of *Gamaselliphis* from South Africa are described, viz. *G. potchefstroomensis* (subgenotype), *grahamstowni*, *lawrencei*, *cathkini* and *montanellus*.

INTRODUCTION.

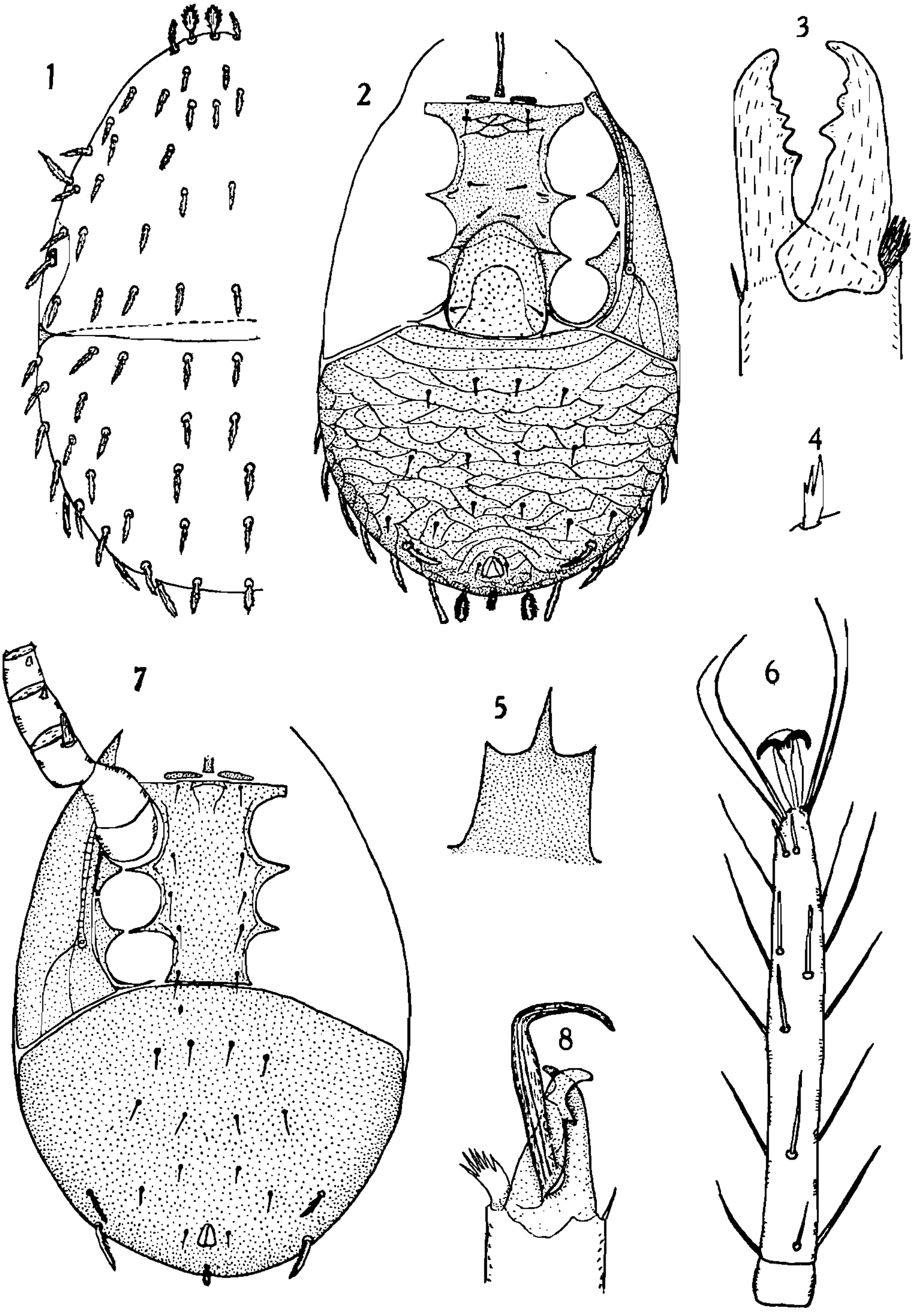
In a recent paper Ryke (1961, in press) regarded *Gamasellus, Digamasellus, Euryparasitus* and *Cyrtolælaps* (sens. str.) as subgenera of the genus *Cyrtolælaps* Berlese, 1887, non 1892 (sens. lat.). The new subgenus described in this paper is also referred to this genus.

The author wishes to express his sincere appreciation to Dr. R. F. Lawrence, Natal Museum, for some of the material on which this paper is based. Sincere thanks are due to my colleague, Dr. J. A. van Eeden, for reading the manuscript. The author is also extremely grateful to the Dept. of Agricultural Technical Services, South Africa, for financial assistance. The holotypes of all the new species except *G. potchefstroomensis* are deposited in the Natal Museum ; other type material is in the Institute for Zoological Research, Potchefstroom University.

Subgenus *Gamaselliphis* n. subgen.

The subgenus *Gamaselliphis* is characterized by the following :

It is a strongly sclerotized species group. The anterior portion of the genital shield overlaps the posterior margin of the sternal shield. One pair of pre-endopodal shields is present. The ventri-anal shield is fused with the posterior dorsal shield. The peritrematal shield is broad, covering the lateral part of the venter, anterior to the ventri-anal shield. The venter of the male is similar to that of the female except for its sterniti-genital shield. The anterior dorsal shield in both sexes overlaps the anterior margin of the posterior dorsal shield.



Text-figs. 1–8.

C. (*Gamaselliphis*) *potchefstroomensis*, n. sp. 1, Dorsum ; 2, venter, female ; 3, chelicera female ; 4, palptarsal seta ; 5, tectum ; 6, tarsus I, female ; 7, venter, male ; 8, chelicera, male.

Subgenotype : *Cyrtolælaps* (*Gamaselliphis*) *potchefstroomensis* n. sp.

KEY TO THE SOUTH AFRICAN SPECIES OF *Gamaselliphis*

1. Leg I exceeding length of body . . . . *G. grahamstowni*, n. sp.
— Leg I not exceeding length of body 2
2. Majority of dorsal setæ serrate or leaf-like 3
— Majority of dorsal setæ not serrate or leaf-like 4
3. Setae on postero-lateral margin of dorsum conspicuously longer than others and with serrate distal parts and rounded tips ; peritrematal shield and ventri-anal shield not separated by integument . . . . *G. lawrencei*, n. sp.
— Setæ on postero-lateral margin of dorsum more or less similar to other dorsal setæ ; peritrematal shield separated from ventri-anal shield by a narrow strip of integument *G. potchefstroomensis*, n. sp.
4. Marginal setæ on dorsum broad and prominent ; length of body less than 400 μ *G. cathkini*, n. sp.
— Marginal setæ simple ; length of body exceeding 400 μ . . . . *G. montanellus*, n. sp.

C. (*Gamaselliphis*) *potchefstroomensis* n. sp. Text-figs. 1–8.

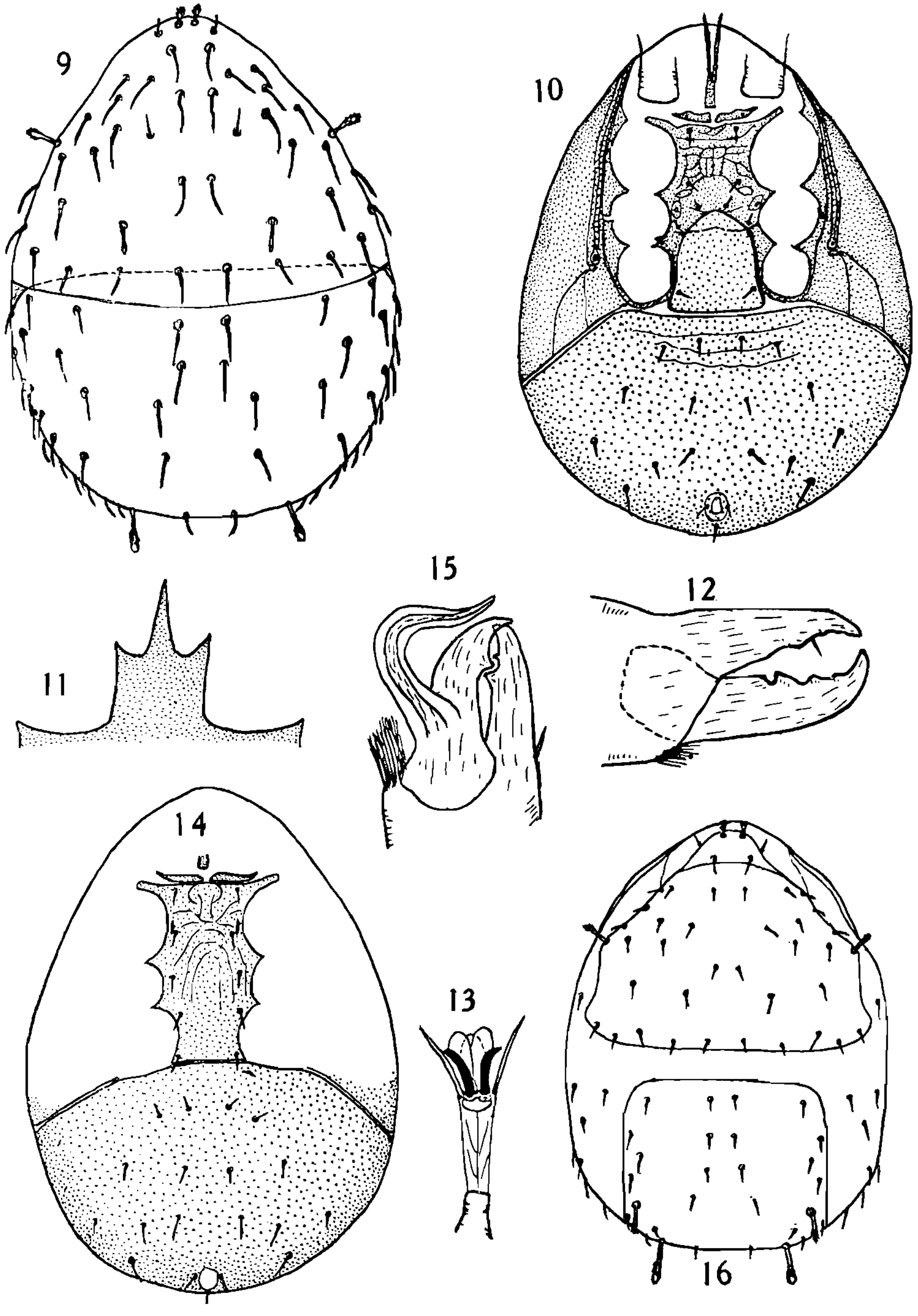
♀.—Dimensions : Length, 443 μ ; breadth, 318 μ ; length of leg I (excluding pre-tarsus), 378 μ.

Dorsum (text-fig. 1).—The dorsal shields are imbricate and reticulate. All the setae on both the dorsal shields are serrate to leaf-like, the vertical setae being almost tree-like. The anterior dorsal shield is provided with 22 pairs of setae and its hind margin overlaps the anterior portion of the posterior dorsal shield. The latter is fused with the ventri-anal shield and likewise bears 22 pairs of setæ. Seta *r*7 is situated on a small platelet which is also provided with a pore.

Venter (text-fig. 2).—The sternal shield bears four pairs of simple setæ. Its concave hind margin is overlapped by the genital shield. The pair of pre-endopodal shields is slender and elongated. The tritosternum has the two normal pilose laciniæ. The lateral portion of the peritrematal shield is produced behind coxa I. The posterior margin of this shield lies almost contiguous with the antero-lateral margin of the ventri-anal shield which covers the entire surface of the venter behind the genital shield. The ventri anal shield bears seven pairs of simple setæ and one pair of serrate setæ in addition to the anals ; the para-anal setæ are simple and the post-anal seta is serrate. The surface of the shield is ornamented by means of lines which form a reticulate pattern. The peritreme reaches anterior beyond coxa I.

Gnathosoma.—The movable digit of the chelicera is tridentate and the fixed digit multidentate (text-fig. 3). The inner basal angle of the palptarsus is provided with a three-pronged specialized seta (text-fig. 4). The tectum (text-fig. 5) has a sharp-pointed mucro flanked by two smaller processes.

Legs.—Leg I is relatively long and is not used as a walking leg. Tarsus I is provided with four long sensory setæ distally (text-fig. 6). It also bears a pretarsus, pulvillus and claws. The other legs are short and have well-developed claws and indistinct pulvilli. The setæ on the legs are simple, those on leg IV being almost spatulate.



TEXT-FIGS. 9–16.

C. (*Gamaselliphis*) *montanellus*, n. sp. 9, Dorsum, female ; 10, venter, female ; 11, tectum ; 12, chelicera, female ; 13, ambulacrum, leg IV ; 14, venter, male ; 15, chelicera, male ; 16, dorsum, deutonymph.

♂.—Dimensions : Length, 426 μ ; breadth, 287 μ.

The dorsum of the male is similar in texture and chætotaxy to that of the female. The venter (text-fig. 7) differs from that of the female only in respect of the sternal and genital shields which are replaced by a sterniti-genital shield. The degree of fusion between the ventral and dorsal shields are the same as in the female. Excepting the cheliceræ, the gnathosoma possesses no noticeable specific characters in which it differs from that of the female. The unidentate movable digit of the chelicera is provided with a prominent sphermatophoral process (text-fig. 8). The femur of leg II is armed with a relatively prominent spur (text-fig. 7). The ambulacra are similar to those of the female.

Habitat and locality.—Holotype female, allotype male and paratype females and males from humus, Potchefstroom, August 1952 and January 1959.

C. (*Gamaselliphis*) *montanellus* n. sp. Text-figs. 9–16.

♀.—Dimensions : Length, 504 μ ; breadth, 400 μ ; length of leg I, 390 μ.

Dorsum (text-fig. 9).—The majority of the setæ on the dorsum are simple. The only exceptions are the serrate setæ *j*1, *z*2 (slightly), *r*5 and *Z*5. The anterior dorsal shield bears 22 pairs of setæ. The entire dorsum is reticulate to imbricate and highly sclerotized.

Venter (text-fig. 10).—The pair of pre-endopodal shield tapers towards their lateral ends. The sternal shield is ornamented as illustrated in the figure. The front end of the genital shield overlaps the posterior margin of the sternal shield. The ventri-anal shield is fused with the posterior dorsal shield and bears eight pairs of pre-anal setæ, all of which are simple. The peritrematal shield is broad and the peritreme reaches to a level anterior to coxa I.

Gnathosoma.—The tectum (text-fig. 11) has a sharp-pointed mucro flanked by two lateral projections. Both the fixed and movable digits of the chelicera (text-fig. 12) are tridentate. The palptarsus bears the usual three-pronged specialized seta.

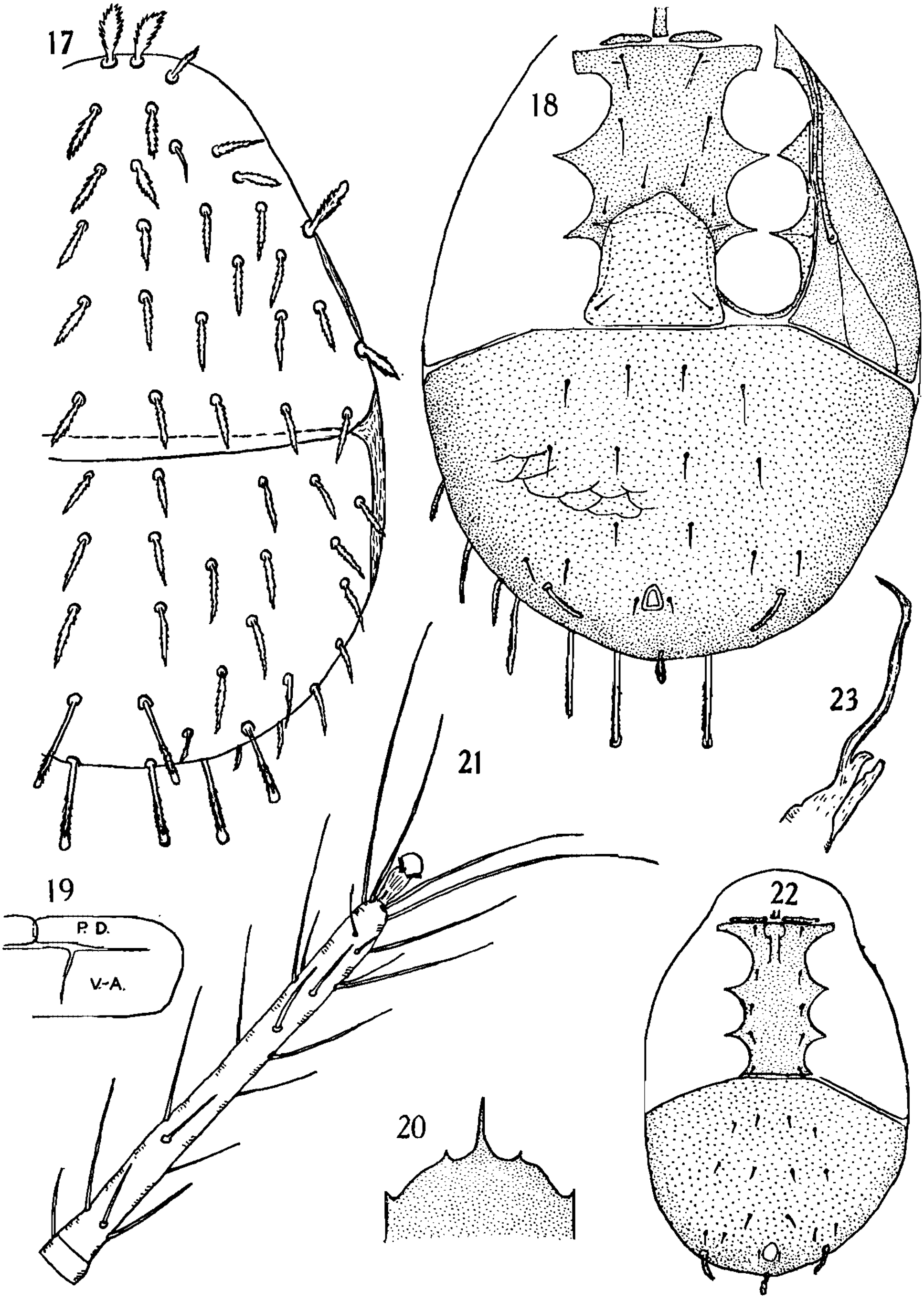
Legs.—Leg I is basically similar to those of other species of the subgenus. All the legs are provided with claws and pulvilli (text- fig. 13).

♂.—Dimensions : Length, 480 μ ; breadth, 356 μ.

The dorsum of the male is essentially like that of the female. The venter is mainly covered by a sterniti-genital shield, a peritrematal shield and a ventri-anal shield (text-fig. 14). The latter shield is fused with the dorsal shield and closely resembles that of the female. Both digits of the chelicera (text-fig. 15) are practically unidentate, the movable digit bearing a relatively conspicuous spermatophoral process. Other features of the gnathosoma are similar to those of the female. Femur II is armed with a prominent spur.

Deutonymph.—Dimensions : Length, 427 μ ; breadth, 280 μ.

The anterior dorsal shield bears 20 pairs of setæ, *r*1 and *r*6 being on the integument (text-fig. 16). The posterior dorsal shield carries 14 pairs of setæ,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TEXT-FIGS. 17–23.

C. (*Gamasellipihs*) *grahamstowni*, n. sp. 17, Dorsum ; 18, venter, female ; 19, lateral view of posterior part of body ; 20, tectum ; 21, tarsus I, female ; 22, venter, male ; 23, chelicera, male.

two pairs of which are prominent and serrate distally. The anterior shield also bears two pairs of serrate setæ (*j*1 and *r*5). The anal shield is relatively large and has a truncate anterior margin. The median mucro of the tectum of the deutonymph is flanked by two large sharp-pointed denticles.

Habitat and locality.—Holotype female, allotype male, morphotype deutonymph and paratype female collected from forest floor, Cathkin Peak, September 1943 ; collected by R. F. Lawrence.

C. (*Gamaselliphis*) *grahamstowni* n. sp. Text-figs. 17–23.

This species can readily be recognized by the antenniform leg I which exceeds the length of the body.

♀.—Dimensions : Length, 560 μ ; breadth, 413 μ ; leg I, 608 μ.

Dorsum (text-fig. 17).—All the dorsal setæ, except *s*1, are serrate. Four pairs of prominent setæ on the posterior margin are serrate distally with rounded tips. Setæ *z*1 are placed in line with the dorsal series. The distribution of the setæ is shown in the figure.

Venter (text-fig. 18).—The sternal, genital and pre-endopodal shields are normal for the subgenus. Excluding the anal setæ the ventri-anal shield bears seven pairs of simple setæ and one pair of serrate setæ. The small simple para-anal setæ are situated in line with the middle of the anus and the paddle-like post-anal seta is placed relatively far behind the aperture. The broad peritrematal shield is fused with the anterior dorsal shield and the ventri-anal shield is fused with the posterior dorsal shield (text-fig. 19). The peritreme stretches to a position in front of coxa I.

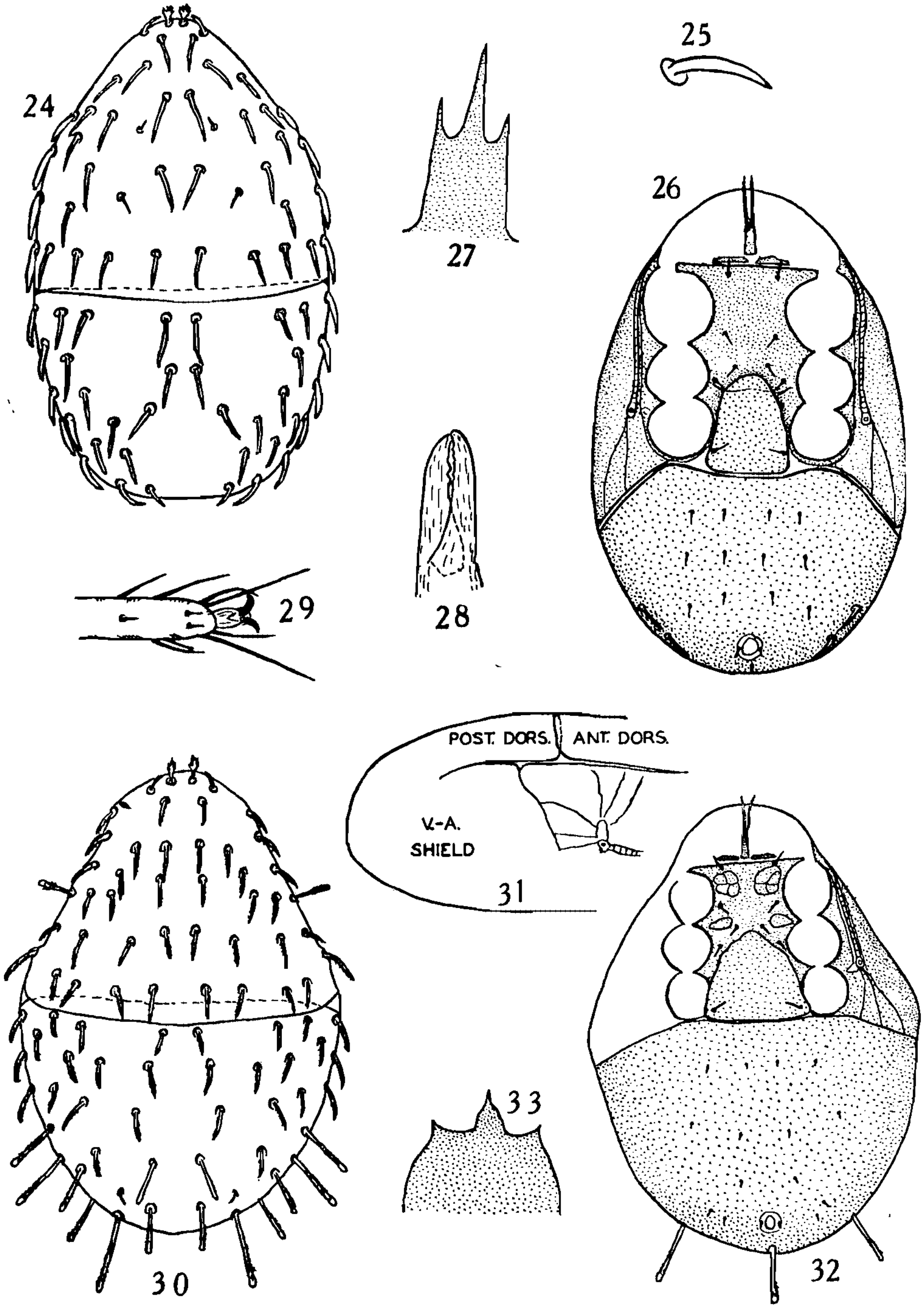
Gnathosoma.—The hypostomal setæ, corniculi and chelicerae are similar to those of other species of the subgenus. The shape of the tectum is shown in text-fig. 20.

Legs.—A striking character of this species is the length of legs I. Tarsus I (text-fig. 21) which is used as a tactile organ bears a small claw and four long sensory setæ. The setæ on the legs are simple, some approaching a spine-like condition and a few being serrate.

♂.—Dimensions : Length, 550 μ ; breadth, 378 μ.

The dorsum is essentially like that of the female. The chætotaxy of the ventri-anal shield is similar to that of the female (text-fig. 22). The sternitigenital shield bears the usual number of setæ. The movable digit of the chelicera bears a long spermatophoral process (text-fig. 23). Femur II is armed with a spur. Other features are as in the female.

Habitat and locality.—Holotype female and allotype male from humus Grahamstown, October 1943, collected by W. G. Rump ; two paratype females and two males from soil, Bathurst, January 1956, collected by P. Graham.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TEXT-FIGS. 24–33.

C. (*Gamasellíphis*) *cathkini*, n. sp., female. 24, Dorsum; 25, dorsal seta; 26, venter; 27, tectum; 28, chelicera; 29, tarsus 1.

C. (*Gamasellíphis*) *lawrencei*, n. sp., female. 30, Dorsum; 31, lateral view of posterior part of body; 32, venter; 33, tectum.

C. (*Gamaselliphis*) *cathkini* n. sp. Text-figs. 24–29.

This is the smallest of the known species.

♀.—Dimensions : Length, 318 μ ; breadth, 210 μ.

Dorsum (text-fig. 24).—The dorsal setæ are strongly developed (text-fig. 25) but no serrations could be detected except the tree-like vertical setæ. The marginal setæ are broad and hyaline-like. The only ordinary simple setæ are *z*1 and *z*2. The chætotactic pattern of the dorsum resembles that of *G. montanellus*.

Venter (text-fig. 26).—The sternal shield bears the usual four pairs of setæ and its hind margin is overlapped by the genital shield. The ventri-anal shield is provided with 19 setæ including the three circum-anal setæ. The two pairs of setæ on the postero-lateral margin are relatively strongly developed. The peritrematal shield and the peritreme are similar to those of other species.

Gnathosoma.—The tectum has a median process with two denticles, which are strongly developed, at its base (text-fig. 27). The movable digit of the chelicera is tridentate and the fixed digit multidentate (text-fig. 28).

Legs.—Leg I (text-fig. 29) bears a small claw, those on the other legs being larger. The setæ on the legs are simple.

Habitat and locality.—Holotype and paratype females from forest, Cathkin Peak, September 1943 ; collected by R. F. Lawrence.

C. (*Gamaselliphis*) *lawrencei* n. sp. Text-figs. 30–33.

This species is quite distinct from other species in several respects and can easily be recognized. It is the largest of the known species.

♀.—Dimensions : Length, 608 μ ; breadth, 470 μ ; leg I, 565 μ.

Dorsum (text-fig. 30).—The dorsum is strongly sclerotized and reticulate. All the dorsal setæ, except *Z*4 on the posterior dorsal shield are serrate. The setæ on the postero-lateral margin are serrate distally with rounded tips. As in *G. grahamstowni* setæ *z*1 are placed in line with the dorsal series. The posterior dorsal shield is fused with the ventri-anal and the anterior dorsal shield with the peritrematal shield (text-fig. 31).

Venter (text-fig. 32).—The pre-endopodal shields are slender. The sternal shield is ornamented as shown in the figure. The sternal shield tapers anteriorly and its apex is almost in line with sternal setæ III. The posterior margin of the genital shield lies contiguous with the ventri-anal shield. The latter is provided with minute setæ which are distributed as depicted in text-fig. 32. A striking feature of the anal region is the presence of a long serrate post-anal seta with a rounded tip. The peritrematal shield is fused with the ventri-anal shield, the line of fusion being visible. Other features of the venter are basically the same as those of other species.

Gnathosoma.—The gnathosoma lacks any noticeable specific characters which distinguish this species from related forms. The only exception is the shape of the tectum (text-fig. 33), the median mucro of which has a broad base.

Legs.—As in *G. potchefstroomensis* and *G. grahamstowni* the distal tip of tarsus I bears two pairs of long sensory setæ. The pretarsus is short and it is provided with a small claw. The claws on legs II–IV are relatively well developed. The setæ on the legs are simple or serrate.

Habitat and locality.—Holotype female from High Flats, South Coast, Natal, December 1943 ; collected by R. F. Lawrence.